Energy and your Environment

Unit 1 Study Guide

Here are some suggestions for how to prepare for the upcoming EE test on Unit 1.

-Review your labs and quizzes.

-Look through your notes for important definitions

-Practice making graphs and calculating slope

1. What are the 5 musts of a proper graph? Add them to the graph below.

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2. What is an independent variable? How do you identify the independent variable in an experiment?

3. What is slope formula? Look it up in your binder.

What do the x’s and y’s in the equation stand for?

Where do you find the #’s you plug into the equation?

4. Complete the sentence:

Every time energy is transferred \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5. What is the Law of Conservation of Energy?

6. What does the Law of Conservation of Energy tell you about the energy changes from the battery lab?

7. What are the definitions of:

|  |  |
| --- | --- |
| Energy |  |
| Kinetic Energy |  |
| Gravitational Potential Energy |  |
| Heat (Thermal) |  |
| Electrical Energy |  |
| Light Energy |  |
| Sound Energy |  |
| Human (ATP) |  |
| Elastic Potential Energy |  |

8. What does it mean to be 100% efficient?

9. Is your computer 100% efficient? Explain.

10. For each of the following situations, list the types of energies involved and the order they change from one form to another.

**Word Bank: GPE, KE, Thermal Energy, Friction, Sound**

Someone leaves the shopping cart at the top of a ramp in a grocery store parking lot and the cart rolls down the ramp and crashes into a truck.

For each part, fill in the blanks with the energy types present.

* 1. The cart is at the top of a ramp. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. The cart is halfway down the ramp. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between the truck and the ramp.

* 1. The cart crashes into the truck. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Does the scenario above obey the law of conservation of energy? Explain.

11. Make an energy flow diagram for the situation above. (Hint: Arrows)

12. Fill in the blanks for this energy flow diagram. A car drives down a street and then coasts to a stop.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Sound

Heat \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

700 250 50

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